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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,967	03/02/2004	Glenn A. Rinne	9180-10CT	2149

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EXAMINER	
ABOAGYE, MICHAEL	
ART UNIT	**PAPER NUMBER**
1725	

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/790,967	RINNE ET AL.	
	Examiner	Art Unit	
	Michael Aboagye	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/03/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-12,15-33 and 68-94* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-11,15-25,27-29 and 77-94* is/are allowed.

6)☒ Claim(s) *1-5,7, 12,26,30-33 and 68-76* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02/03/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Hornberger et al. (US Patent No. 3,497,774).

Hornberger et al. teaches a method of bonding two components to manufacture an electrical circuit module, the method comprising: positioning the two components relative to one another to obtain a desired orientation (Figures 1,4 and 6); and after positioning the two components, bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding, wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles wherein each of the particles of the metal comprises a glass (dielectric material) coated with the metal before bonding the two components (see column 1 line, 13 – column 4, line 75).

3. Claims 33 and 69 rejected under 35 U.S.C. 102(b) as being anticipated by Minetti (US Patent 4,332,341).

Minetti teaches a method of bonding two components, the method comprising: positioning the two components relative to one another to obtain a desired orientation

(Figure 5), and after positioning the two components, bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding (abstract and column 2, lines 1-23), wherein a first one of the components comprises a substrate and wherein a second one of the components comprises one of a micro-electronic component, an optical component or a micro-mechanical component (Figure 5 and abstract).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 30-32 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minetti (US Patent 4,332,341) in view of Avery et al. (US Patent No. 6,340,113)

Minetti teaches a method of bonding two components, the method comprising: positioning the two components relative to one another to obtain a desired orientation (Figure 5), and after positioning the two components, bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding (abstract and column 2, lines 1-23), wherein a first one of the components comprises a substrate and wherein a second one of the components comprises one of a micro-electronic

component, an optical component or a micro-mechanical component (Figure 5 and abstract).

Minetti does not expressly teach bonding comprising plating the metal between the two positioned components.

However Avery et al. teaches a method of low temperature joining of electronic components wherein bonding comprises electroplating or electroless plating of the bimetallic particles on the two positioned components in order to produce a uniform coating (see column 4, lines 16 – 53 and figure 3).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have applied the bonding metal by electroplating or electroless plating on the two positioned components in the method of Minetti as taught by Avery et al. since electroplating or electroless plating is well known in the art as one of the effective techniques for producing a coating for bonding a plurality of components, resulting in a stronger bond (see Avery et al., column 4, lines 15-36).

6. Claims 5,12, 26, 68, 71-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hornberger et al. (US Patent No. 3,497,774) in view of Minetti (US Patent 4,332,341)

Hornberger et al. teaches a method of bonding two components to manufacture an electrical circuit module, the method comprising: positioning the components relative to one another to obtain a desired orientation (Figures 1,4 and 6), and bonding the two components in the desired orientation with metal wherein a temperature of both

components is maintained below a melting temperature of the metal while bonding, wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles, wherein bonding the metal particles comprises applying pressure to the metal particles; wherein each of the particles of the metal comprises a glass (dielectric material) coated with the metal before bonding the two components (see column 1 line, 13 – column 4, line 75).

Hornberger et al. does not teach a method of bonding wherein at least one of the two components comprises a micro-electronic component, and optical component and/or a micro-mechanical component.

However Minetti wherein a first one of the components comprises a substrate and wherein a second one of the components comprises one of a micro-electronic component, an optical component or a micro-mechanical component (Figure 5 and abstract).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to have modified the circuit module components of Hornberger to include a micro-electronic component, and optical component and/or a micro-mechanical component as taught by Minetti wherein doing so would amount to a mere substitution of one analogous component for another within the same art that requires the same manufacturing step, hence making the process versatile and flexible (abstract and column 2, lines 1-23).

Allowable Subject Matter

7. Claims 8-11,15-25, 27-29, and 77-94 are allowed.

Terminal Disclaimer

8. The terminal disclaimer filed on February 3, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,863,209) has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

9. The examiner acknowledges the applicant's amendments received by the USPTO on February 03, 2006. Claims 1-5, 7-12,15-33 and 68-94 remain under consideration in the application and claims 6,13,14 and 34-67 have been canceled.

10. Applicant's arguments with respect to claims 1-5, 7,12, 26, 30-33, and 68-76 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Aboagye whose telephone number is 571-272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Aboagye
Assistant examiner
Art unit 1725
04/26/2006

AM
AM

KEVIN KERNS
PRIMARY EXAMINER
Kevin Kerns 4/26/06